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LETTER REGARDING U S NAVY RESPONSES TO REGULATORY COMMENTS ON MARCH 2011 MONITORED NATURAL ATTENUATION GROUNDWATER SAMPLING RESULTS AT SITE 8 NETC NEWPORT RI
7/15/2011
TETRA TECH

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C-NAVY-07-11-4483W

July 15, 2011

Project Number 112G02124

Ms. Ginny Lombardo
U.S. EPA Region I
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Mail Code OSRR07-3
Boston MA, 02109-3912

Mr. Gary Jablonski
Rhode Island Department of Environmental Management
235 Promenade Street
Providence RI 02908-5767

Reference: CLEAN Contract No. N62470-08-D-1001
Contract Task Order No. WE19

Subject: Navy Responses to EPA and RIDEM Comments on the March 2011 Monitored Natural Attenuation (MNA) Groundwater Sampling Results
Site 8 – NUSC Disposal Area, Naval Station Newport, Newport, Rhode Island

Dear Ms. Lombardo, Mr. Jablonski:

On behalf of Ms. Maritza Montegross, U.S. Navy NAVFAC, Tetra Tech is pleased to provide the responses to EPA and RIDEM comments on the May 25, 2011 technical memorandum which presented the March 2011 MNA sampling results. Upon approval of these responses, we will finalize the technical memorandum. If there are any remaining concerns, then we would like to discuss them at the July 20, 2011 meeting.

Please contact me at (978) 474-8449 or jim.ropp@tetratech.com should you have any questions.

Sincerely,

J. Ropp

James Ropp, P.E.
Project Manager

Encl: Responses to EPA and RIDEM Comments on the MNA Tech Memo (email)

c: M. Montegross, NAVFAC (w/ encl. – email)
D. Moore, NAVSTA (w/ encl. – email)
P. Steinberg, Mabbett (w/ encl. – email)
P. Crump, RIDEM (w/ encl. – email)
K. Munney, USF&W (w/ encl. – email)
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Navy Responses to EPA Comments (dated June 20, 2011)
on the Draft March 2011 Monitored Natural Attenuation (MNA) Groundwater Sampling Results
Technical Memorandum (dated May 25, 2011) for
Site 08 – Naval Undersea Systems Center (NUSC) Disposal Area
Naval Station Newport, Newport, Rhode Island
July 15, 2011

Comment 1 – *The level of detection for several analytes including tetrachloroethene, trichloroethene, and vinyl chloride exceeded the project action limits for all samples.*

Response: Comment noted. As noted on page 3 of the MNA sampling work plan (March 2, 2011), the work was performed in accordance with procedures established in the 2010 and 2007 Remedial Investigation (RI) work plans. Thus, the detection levels for the MNA samples are consistent with those used during the SRI. It should be noted that the current investigations are past the risk assessment phase where lower project action levels (PALs) were needed to meet screening levels. The current detection limits are satisfactory for comparison to Maximum Contaminant Levels (MCLs).

Comment 2 – *The MNA Tech Memo states at the bottom of page 2 that: "Multiple lines of evidence are being considered to evaluate whether natural attenuation has been occurring and whether conditions will allow it to continue to occur. This includes evaluations of temporal and spatial trends (showing decreasing COC concentrations and plume footprint), the presence of biodegradation daughter products, and comparisons of COC and daughter product footprints to geochemical footprints." However, only a very limited temporal trend evaluation is attempted in the MNA Tech Memo and that evaluation states that only "limited historical sampling events are available to develop trend graphs and/or perform statistical evaluations (i.e., only 2 to 4 data points are available per well)." Data are graphed for two wells that each have four data points and the text states that "The other wells have only been sampled since 2008." The MNA Tech Memo briefly summarized the results of the supplemental groundwater samples performed in March 2011 and presents the analytical results and backup documents; however, essentially no analysis was provided. Navy did not attempt in this document to demonstrate that MNA was occurring through presentation of charts, maps, trends, or statistics. As EPA has already pointed out to Navy, there is currently insufficient data available to support a MNA remedy for this site. With the limited amount of data available, a statistical or trend analysis would have limited significance. Navy has agreed to consider the collection of additional data as the project moves forward and the feasibility study is developed. If MNA is to be proposed as a remedial component in the FS, additional data collection to support the viability of MNA will be needed.*

Response: It is agreed that there are limited historical data available to identify long-term natural attenuation trends. The Navy plans to conduct additional groundwater MNA sampling prior to the Record of Decision (ROD), although the sampling schedule remains to be determined. It should be noted that chlorinated volatile organic compounds (CVOCs) take time to attenuate, thus it may not be possible to conclusively demonstrate substantial CVOC degradation within the timeframe of the planned Feasibility Study (FS) and ROD schedule. However, the available data provide some positive signs of CVOC attenuation and as such, MNA can be a viable component of whatever remedial action is selected (e.g., as a polishing step following treatment and/or for addressing the plume fringe). The revised draft FS will include modeling of CVOC attenuation. Work on the FS, Proposed Plan, and ROD needs to continue in parallel with any further MNA evaluations in order to meet the September 2012 ROD schedule.

Comment 3 – *p. 4 of 5: In the first sentence of the first bullet, please review the listing of 1,1-DCE and ethane in the first sentence as these are not typical daughter products of PCE and TCE degradation. Was the intent to list ethene rather than ethane?*

Response: The text will be clarified that the expected daughter products are 1,2-DCE, vinyl chloride, and ethene. 1,1-DCE is a possible, but less common, daughter product.

Navy Responses to RIDEM Comments (dated June 22, 2011)
on the Draft March 2011 Monitored Natural Attenuation (MNA) Groundwater Sampling Results
Technical Memorandum (dated May 25, 2011) for
Site 08 – Naval Undersea Systems Center (NUSC) Disposal Area
Naval Station Newport, Newport, Rhode Island
July 15, 2011

Comment 1 – *Page 3, 1st bullet; first sentence: "Limited historical sampling events are available to develop trend graphs and/or perform statistical evaluations." This Office concurs with this statement and requests that the Navy continue to perform quarterly sampling in order to collect sufficient data to be able to establish seasonal and statistical trends for this Site. This means groundwater sampling should be performed in June 2011, September 2011, December 2011, March 2012, etc...*

Response: It is agreed that there are limited historical data available to identify long-term natural attenuation trends. The Navy plans to conduct additional groundwater MNA sampling prior to the Record of Decision (ROD), although the sampling schedule remains to be determined. It should be noted that chlorinated volatile organic compounds (CVOCs) take time to attenuate, thus it may not be possible to conclusively demonstrate substantial CVOC degradation within the timeframe of the planned Feasibility Study (FS) and ROD schedule. However, the available data provide some positive signs of CVOC attenuation and as such, MNA can be a viable component of whatever remedial action is selected (e.g., as a polishing step following treatment and/or for addressing the plume fringe). The revised draft FS will include modeling of CVOC attenuation. Work on the FS, Proposed Plan, and ROD needs to continue in parallel with any further MNA evaluations in order to meet the September 2012 ROD schedule.

Comment 2 – *Page 3, 1st bullet; 4th paragraph: "This may indicate a reduction in the plume footprint at the fringes (to be confirmed through further groundwater monitoring)." MW-125B was only sampled for one other time in 07/31/08 and MW-122 was sampled for 2 other times in 06/03/08 and 06/30/10. The sampling periods are approximately three years apart and not collected in the same quarter. It could also indicate a seasonal change. Please remove this statement from the document due to the fact that insufficient number of sampling rounds has been collected for these two wells to draw any conclusion.*

Response: The text in the 4th paragraph will be changed to the following: "CVOCs were non-detect in March 2011 at MW-122 and MW-125B whereas CVOCs had been detected in these wells during previous sampling events. MW-122 was previously sampled in June 2008 (1.4 J ug/L) and June 2010 (2.52 J ug/L). MW-125B was previously sampled in July 2008 (20.3 J ug/L) and August 2008 (13.5 J ug/L). These results may indicate a reduction in the plume footprint at the fringes; however, due to the limited data set, the observed results could also be attributable to seasonal changes or other fluctuations. Additional groundwater monitoring is needed to further evaluate MNA trends."

Comment 3 – *Page 4, 1st bullet: This bullet of the report discusses the concentrations of the various chlorinated solvents (tetrachloroethene, trichloroethene, dichloroethene, vinyl chloride, etc) and the associated concentrations as supportive of the breakdown of tetrachloroethene or trichloroethene. This analysis would be straight forward at a site in which tetrachloroethene and trichoroethene were the only known compounds disposed of at a site. Unfortunately, all of these chlorinated solvents are materials which may have been disposed of at this site and thus are not necessarily break down products. The report should clearly state this fact in this section.*

Response: The paragraph will be modified to acknowledge the uncertainty in the materials disposed at the site; however, the presence of cis-1,2-DCE over trans-1,2-DCE may be further evidence that the compounds are present as a result of PCE and TCE degradation.

Comment 4 – *Page 4, 3rd bullet: This bullet discusses the chloride concentrations at various locations across the site. The report should include a statement that the assessment of chloride concentrations in the landfill is complicated by the fact that typically in landfills chlorinated solvents are not the only source of chlorides.*

Response: The paragraph will be modified to acknowledge the uncertainty in the materials disposed at the site.

Comment 5 – *Page 5, 1st bullet: The report notes that the methane concentrations at the site are indicative of favorable reducing conditions. The report should also note that there are other sources (known former landfill) of methane present at the site which complicates this analysis.*

Response: The paragraph will be modified to acknowledge the uncertainty in the sources of methane generation at the site.

Comment 6 – *Page 5, 2nd bullet: The report notes that TOC is measured to see if hydrogen could be available for the dechlorination process. If a range of TOC is typically needed to support this process this should be noted in the report.*

Response: The paragraph will be modified to note recommended literature values. As already noted in the document, the TOC concentrations were found to be low across the site.

Comment 7 – *Page 5, last paragraph; last sentence: "As discussed during the April 14, 2011 technical meeting, further sampling for MNA parameters is currently being considered to provide more information regarding changes in the plume over time." This Office has stated in meetings and in our written comments on previous documents submitted for this Site that to date insufficient groundwater data has been collected to allow for an objective evaluation of MNA for this site. This Office request that you change "considered" to "proposed" in the above sentence. In order to evaluate the changes in a plume over time, the Navy will need to collect quarterly groundwater sampling over an extended period of time to adequately characterize the groundwater at this site. This Office does not consider two to three rounds of groundwater sampling (in some cases the same quarter) over a three year period sufficient to make any conclusions regarding changes to a plume over time.*

Response: The text will be changed to "proposed" as requested. See also the response to Comment 1.

Comment 8 – *Page 5, last paragraph: The analysis has primarily focused on chlorinated solvents at the site. At this site there are other contaminants (both organics and inorganic). The report should note whether these contaminants are also naturally attenuating.*

Response: As noted in the March 2, 2011 work plan, this MNA sampling event focused on the CVOCs, which are the predominant COCs associated with the identified groundwater risks. The other organic COCs in groundwater are much more limited in extent. For example, 1,3,5-trimethylbenzene is limited to MW-100B, ethylbenzene is not present above MCLs, and 1,4-dioxane, carbon tetrachloride, and chloromethane are present only at low/trace levels. Similarly, elevated concentrations of four of the seven metal COCs are limited to a single well (MW-103S). The March 2011 samples were not analyzed for metals; therefore, no new data are available to evaluate MNA trends. Substantial attenuation of the metals concentrations is not expected until the soil cleanup has been implemented; however, as noted in the response to Comment #1, additional MNA sampling will be conducted and metals analyses may be considered as part of that in order to provide a better historical/baseline data set.

Comment 9 – *If the Navy is going to propose MNA as an alternative for the groundwater in the FS, it would seem prudent for the Navy to obtain the necessary data, including a microcosm study, before the FS is delivered to the two Agencies for review.*

Response: Due to the ROD schedule, the additional MNA sampling and FS reporting needs to proceed concurrently. See also the response to Comment 1.

Comment 10 – *The submittal includes tables in PDF format with the sampling results for the individual wells and individual contaminants. In future reports, please submit this information in a useable, non PDF, Excel format.*

Response: The tables will be provided in Excel format.